Notebook, N-02-03-08

The only dated entry in this notebook is from March 1902. All entries are by Edison. The book contains notes and drawings regarding several experiments that deal mainly with electricity, matter, and electromagnetic radiation. Among the entries are items pertaining to x-rays, etheric force and "xyz rays," and electrochemical recording apparatus. Also included is material relating to an organic liquid battery and the production of battery jars. The book contains 288 numbered pages; many pages are blank.

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Notes

March 8 1902 - J. A. Edison

Sensitive chemical paper for ~~[illegible]~~
recording by current —

Nitrocatechol very sensitive
test alkaline plat pen + open Snt
Chlk + above — H-Side pure free KOH

Pt = Tellurium pen
OX Ferri Cyanide of Potassium + NaCl 1/2 + 1/2
OX Iodide of Potassium 1 bottle gallon — starchy surface

Dry

Selenium point, (Crystals)
Alloy Se + Lead Se 80% Lead 20%
alloy Te 80 Se 20 also Te 50 Se 50 —
Surface coated in vapor with Nickel Hydroxide KOH moist
Chloride K + phenolphtalein — Hydrogen oxide —
Bismuth hydroxide ~~Hydrogen~~ oxide
Bubble pen — ox for reversals, Iodide K + phenolphtalein

Silver pen Chlk organic nitrate compound exposure to light
+ provided develope by hydroquinone etc

New Idea — Use metals for point + base — of same
kind or a solution of the metal [illegible] —
the deposit will scrape off by moving point + deposit
block on Hydrogen oxide ——

OXS

ammonphosphomolybdate + ammonium Chloride (mercury) –
" " Chromic acid – see production of ammonium bicrate –

Zinc + Zinc point in Sulphate Zinc –
also Very amalgamated points, also KOH saturated with Zn_2O

Cu + Cu – Sulphate Cu –

Ag + Ag nitrate Ag –
" cyanide Ag + K –

Pb + Pb – acetate Pb
also PbO dissolved KOH,

Fe + Fe in Sulphate Fe

Bismuth + Bi – Nitrate Bi –

~~Hydrogen~~

Cd + Cd in Sulphate Cadmium –
Sb + Sb in KOH saturated with oxide Sb

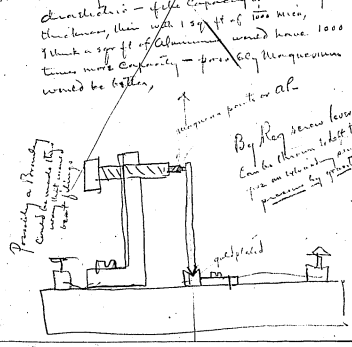
Prussian blue mixture + Cl + K + hydrogen oxide K
drawings, colors

Formation of Sulfides –
Hyposulphite in Sulphides of K – diff methods –

Note two dead flat surfaces of Magnesia ½" sqr
buffed very with the compressor ~~to~~ immersed by the
thin film of oxide when in Contact in one
where the temp is extremely low + yet it higher
temp it will Combust by active friction and so on
~~to~~ formed with sulphur ~~to~~

possibly a weak current on ground with telephone or
would return coupled with induction coils Cause Current conduction
to take place & [illegible] press thro telephone or
possibly a cylinder of mica or plate pass
work in Mellograph — weak currents

Possibly a Condenser of Extraordinary
Capacity could be made with Aluminum
foil alone or Platinum — one piece of foil
resting on the other, the oxide serving as the
dielectric — of the Capacity or directly as to
thickness, their with 1 sq ft of foil 1000 Mfd,
I think a sq ft of Aluminum would have 1000
times more Capacity — press 60 Mergueriums
would be better,



New Idea for a quick Electric clock Box

a 6 strips gold plated, surface between any of these
Photo pinnacles double electric between any possibly
Electrotypes between Zinc copper

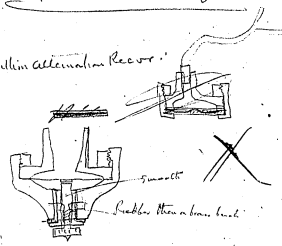
It may be possible that the strips could be
rubbed on any a stone surface across a ~~w~~ ~~be~~

I wonder if a always battery could ~~be~~ be made
with clock long down 1000 ft long wire with wire
straight angles, by long John in making the charging
that a battery,

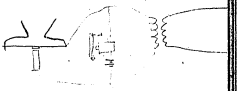
~~Open the of plated~~

Dried paper soaked in strong Sulfate Ni then dipped in KOH, but with 4 cells Bunsen only got poor mark —
Think there was insufficient Ni OH, should be heavy coated or a solid cylinder of the Hydrate — it coated Gel mixed with some Magnesia OH — Dried to a powder — Compressed — then wet with KOH —
Think Eng Clinik says ~~[illegible]~~ — slipped on mandrel Phono with pen on arm 6 3 good way

For Mellin Alternating Recor.



These points to be very fast as they are to be heat within [illegible] of each –

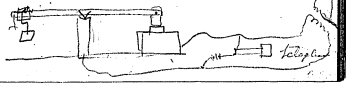


Relay [illegible] when Contacts by each individual stop the rapid alternations, also the Constant Current polarizes the one [illegible]

possibly points of Magnesium or aluminum might work on actual Contacts, possibly the rapid alternations might induce the local Current to circulate – might lay in place of relay a galvanometer – or in Telephone,

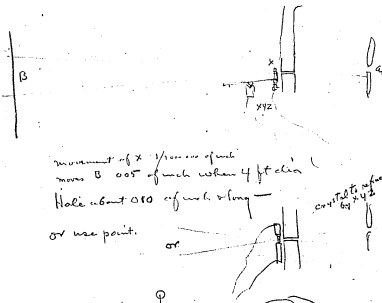
also Oxidized Fe Cu Pb Zn Cd Sn
possibly the [illegible] [illegible] [illegible] [illegible]
If actual Contact will do the Instrument could be pre-adjustable

What might be a better instrument of result is a Effect Current or is not to make a sound in them

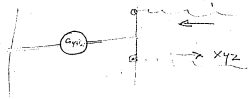


It may want a finer point to
Concentrate the effect of the
alternations,

new Sector

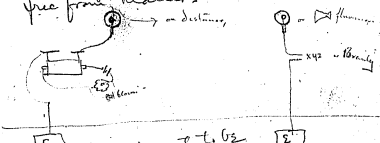


Possibly the pin hole could be filled with a .010 dia plug of a crystal ~~[illegible]~~



XYZ passing thru the Crystal causes the beam of light to deflect,

Possibly an X ray tube is only way to get Crystal with the Ether free from Matter - hence -



Probably matter to be enhanced beyond X
of Rays is beyond X thus XYZ Rays necessary

To make solid blocks of crystalline substances — powder them up & moisten very slightly with some solution after sub & then put them in a great hydraulic press hot — Experiment to get them clear —

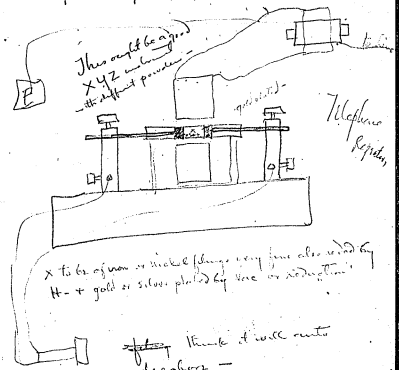
Try large crystal & crush it in mortar — also dehydrate the stuff ~~there~~ is that powdered crystal & then moisten with water & press —

Make chemical alloys thus for exchange

Tungstate of Na —	100 —	di tungstate	5 —
	90	"	10
	80	"	15
	70	"	20
	60	"	30
	50	"	40
	40	"	50
	30	"	60
	20	"	70
	10	"	80
	5	"	90

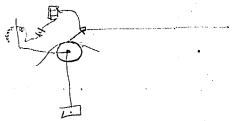
Also on several thousand — 5 from samples

XYZ - + Telephone repeater or new Receiver



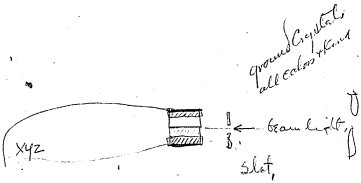
See of Rep Brandly effected by X ray

good — for sensitive chem Jelgh paper
device - thus



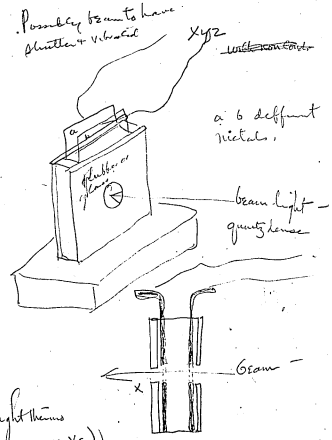
Use a good inductive receiver to a weak current which can be controlled by a necessary & have the current in such a direction that it tends to make a mark but does not quite do so, the incoming current then has not the same work to do for instance if we have a system current to make a slightly visible mark (as preliminary work) then any source producing very much greater results, possibly polarise & shaken down somewhat & then constant current flows more in addition.
Thus obtained more than quadruple the sensitiveness of KI or Fe ferrite,
it with the thread a pen, many wks a telefone

Possibly pens with salts of the same metal might be very sensitive instead of platinum drawing rubber off a block.
Then the pen stones be of some metal!!



Perhaps Thermo Couples which gives no current when heated might give XYZ – use XYZ Coherers or other units, Eliminating vibrating circuit on large number of Thermo Couples.

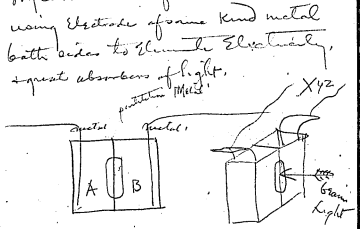
If Thermo good Couples are a question of the Combn of an acid forming metal like Sb with a basic forming metal like Zn & High Alumina cut in regard Their Tungsten with Magnesium as an alloy or Mo with Al Zn Etc of b. gas


Possibly beam to have
shutter + V.V. coil
X yz
a & b different
metals.
shutter or
chopper
beam light
quartz lense
Beam
x
Light thing
(possibly X end)
Electrode solid
no hole to
get total absorption
+ reflection back + forward

OVER

Try. Ether, Sonc Sulfuric – Acetic,
Trichloracetic, Bisulfide Carbon, Aniline oil,
Oil Cassia, Oil Sassafras, Benzol,
Mirbane – Distilled Water, Alcohol, Ethyl
+ Methyl – Chloroform – Kerosene,
Paraffine oil – Butter Antimony + others,
&c.

Try conc solution of salts in Water also
using electrodes of same kind metal
both sides to Eliminate Electrolyzing
+ great absorbers of light.

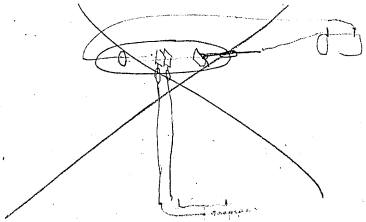


The junction between two dif liquids.

In X Ray Tubes — make several with different residual gas left in —

Make one filled with Oxide Magnesia with Ray electrodes —

Make a tiny Ray — ~~[illegible]~~ — without air —



X47

297
264
33

330
297
33

352
330
22

396
352
44

440
396
44

495
440
55

33)
33

22)
44
44
55

297
264
33

330
297
33

352
330
22

440
396
44

495
440
55

33
22
44
44
55
33
66

396
352
44

528
495
33

594
528
66

660
594
66

704
660
44

Middle C - 264
D 297
E 330
F 352

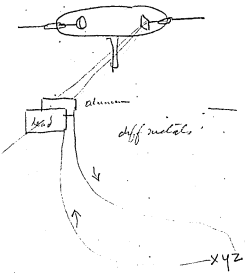


Plate with grounds of Barium deposited on Collodion or gelatine or albumen solution, the crystals will be very fine & stand up sharp fluorescence also good for photographing

X photography –

Cuprous chloride is very sensitive to light – See Watts 1st Sup page 493 also 3rd Sup 1st part 566 –

~~Black paper~~

Bismuth oxides combine together + one double oxide loses its Ox at 130 Cent. This should be worked up as sub for Nickel +

For Thermo make alloys of Selenium + Bismuth Zinc Sb etc –

Collect all the scrap platinum in Lab + make all into platinum Salt Original process C.W.

An Expensive fluoroscope can be obtained by keeping the round Mica disk flat & pouring a few drops of the Concentrated Solution on it & let the water the Evaporate, in most Cases the crystals formed will probably adhere to the surface of solution.

Prisms of fused material Can be Cast between plates of glass at proper angle —

Photo Tungstic acid in presence of organic Matter & Light reduced to Blue —

Impossible heat alloys of alf. metals.

Sulfide Copper magnetic!

Red Thermo alloy to a fine point from the bottom

X Y Z

Cop

Silver

Copper

1/4

1/4

X

1 ohm

1 ohm

Or cut X a vibrator & very sensitive telephone of very low ohms

Possibly on X Y Z

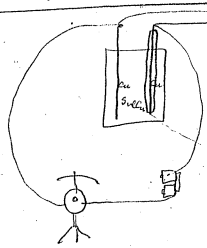
Reason with work

Beet thermo alloy

Silver

Wound balanced to give light pressure —

Palladium will not amalgamate because there is a very thin layer of something over it = Think it could be removed in Bromley by soaking charcoal powder of right size in Chl platt = heat in hydrogen —



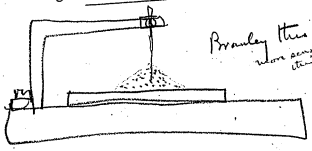
also Zn Zn + Sul Zn + other non p/39

just the smallest possible point exposed —

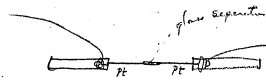
Aluminum point only 1/4 of tops of each exposed. like other large ap —

Dry photo plates, soaked in dark in Sol. Oxalate ~~[illegible]~~ Lithia, dried & then used to photo by arc light should be very sensitive,

Try a sheet with crystals on exposure to arc & then mount — dark box with plate & a pattern see if photos, also see if it goes through opaque paper —

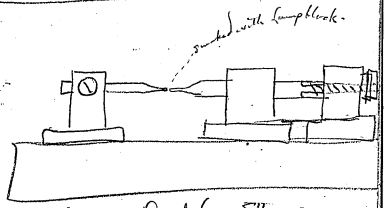


Brasley this way when sensitive stick —



smoked with Lampblack

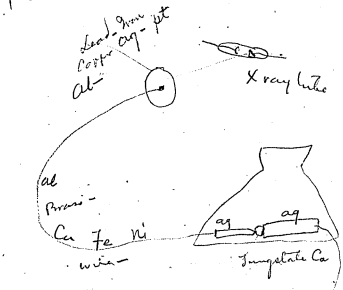
Bromley



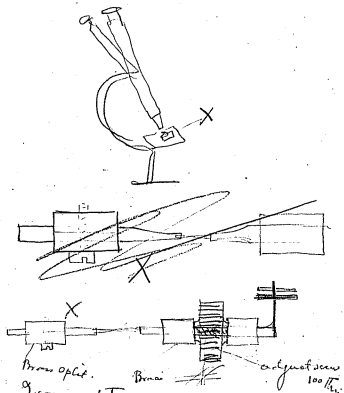
Dark Box Etheric -

Make Tungstates & Molybdates of all the metals the old way by fusion -

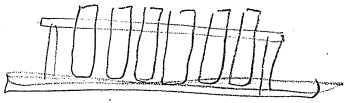
Make sulphides of Ba Sr Ca
Mg Zn Be Thoria, Zr Al etc
by fusion for Luminous or phosphors



Try Thorno on p. 39
material fluoroscope —
also various XYZ
Reactions 100 pt or more long



Thro co to be made very fine with
points dead central + graft points
down to $\frac{1}{1000}$ or less – under Microscope
high power – in Dark box

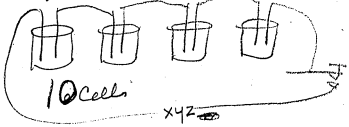


Tray for holding

actual Dyz Cell

See if X ray explodes Iodide Nitrogen
also in Ethereal does it a thing as a Bromide

Generators of X Y Z



Use Bisbow Electrode for one &
following for others,
Silver - Copper - Zinc - Tin - Lead - Iron -
Nickel - Aluminum - Bismuth,
Cobalt, Aluminum, Magnesium -
Sulphide Copper - Tellurium - platt
gold - ~~f~~ Cadmium - Sulfide Iron
Iron coated with scale - Cu with scale
Use following Solutions

Conc H_2SO_4 — Bisulphide Carbon, ditto with Extra Sulphur dissolved, also following dissolved in it.
Oxalic a Chromic a, acetic a, + sulphates of Uranium —

Chloroform — ditto with Resin, ditto — Bromine, Iodine, Sulphur, pyridine, aniline, ferric chl, $HgCl_2$. Kcy K sulphate + Sulphide picric acid — trichl acetic acid —
also all organic radicals with metals + organic bases — Same for all the following —
Oxalic

Glacial acetic acid with following dissolved in it

Chromic acid – Bromine, Iodine, HgCl –
Ferric chloride, Sulphur – pyridin, cerulin,
Trichloracetic acid – K Sulphite K Sulphide
KCy Oxalic

ditto Trichloroacetic acid, with
following dissolved in it
Bromine, Iodine, Sulphur Ferric chloride,
HgCl – K Sulphite K Sulphide
Chromic acid KCy Oxalic KOH

Ether, with following dissolved in it
Ferric chloride, ClHg – Bromine, Iodine,
Sulphur, K. Sulphite, Chromic acid – KCy
Oxalic KOH

Absolute Ethyl - with following dissolved in it - Bromine, Iodine, Sulphur K Sulphite, K Sulphide, Murbane, Picric acid - chromic acid KCy aniline with or without Hg + Cu Sulph oxalic KOH,

Benzol with following dissolved in it - and Bromine, Sulphur K Sulphite K Sulphide - HgCl - ferric chl, Murbane, Picric acid chromic acid KCy aniline with Hg + Cu Sulph - oxalic KOH

Pyridin with following dissolved in it = and Bromine, Sulphur Picric acid chromic acid HgCl - FeCl, aniline, K Sulphite + Sulphide, KCy oxalic KOH

Liquid Chloride tin with following dissolved — it = HgCl FeCl - K sulfite + sulfide, Chromic acid, Trichloracetic a acetic, Bromine, Iodine, Alcohol, KCy Oxalic KOH

Acetone, add Bromine — same as ether | KOH

Aldehyde — add - Bromine,

Chloral Hydrate, add Bromine - KCy

Phenol — add Bromine, Iodine, Chromic acid, Naphthylamine, K Sulfite + Sulfide, HgCl - FeCl — Trichloracetic acid acetic acid picric acid KCy — Oxalic - KOH.

Probably best results will be obtained by CP Benzol — + dissolved Butt. —

perhaps Bichromated Gelatine
will have chromic a reduced by.
X Y Z or Elec + that the oxyd gelatine
is not deoxydized by Ct of Co, it would
act as a Bichromate for Bromley
with a film + 1/1000 much power slowly
moved 1/2 the alternation in showing
work — Think aniline black by
Electrolysis is not reducible effect,
possibly Ferrous oxal iter, + chloride Silver
or a dry plate film —

If aniline, use Hydrochloride of aniline with
some Copper + ammonium Chlorate

See Wallis 2nd Sol 77 Sulphate of aniline.

pyrogallic acid with Nitrite K – O of K oxides
pyro + alkali free use two pour one in bath with the other

also pyro + a salt of lime the free lime causes
pyro to absorb O + blackens also a K salt,

Experiment with proper tinted with all
the aniline Colors + plot pour to see if any
Colors reduced by Current —

for keeping ~~[illegible]~~ films or proper moist
& just not wet enough to conduct + still
appear dry — use, Chl Lithia, Chl Calcium —
Not ammonia; Chl Zn; Chl Mg — use a Chl Mg
little with the Water which after Evapor
leaves just enough to keep proper conducting
The Chlorine will react with H to give free
O for oxdg —

When go back to lab collect all
the chemicals together, put on new
Labels with India ink + also
Hydrofluoric — make sets of trays +
arrange a Catalogue also fill in
Missing Chems from Merck +
Dilaer — Schuchart —
Clean up precision room + put in dark paper

Don't forget to powder up a piece of Each granite, Syenite etc sample in Collection for X fluorescing.

Organic Liquid Battery

Liquid base Acetal

" Acetic acid, in which are dissolved the hydrates of the metals or metal + alkaloids + organic bases.

Chromic hydrate diss

all deliquescent salts are sol alcohol

Nit Mag - prec all Ca, Dichloride Tin, Benzyta, (Sesquichloride Fe Proto Fe Nit Co Proto Mn Cu Ni)

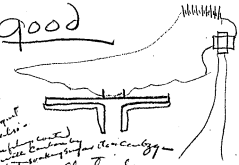
Try the Ethers Sulphuric, Oxalic Ethyl etc, both diffusing Chrome dissolves

also Chlorinated Hydrocarbons with diff Chrome dissolved

Try dissolving phosphides + Sulphides hydrated in the organic liquids —

It is said that a bar of iron held against a grind stone + grooved at the middle so that the ends keeps cool in the middle but so hot at the end can scarcely hold hand on it — unless gale,

good

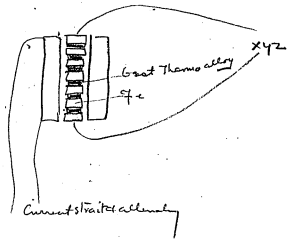


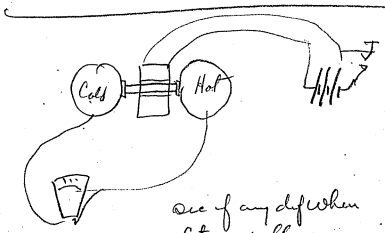
Telephone —

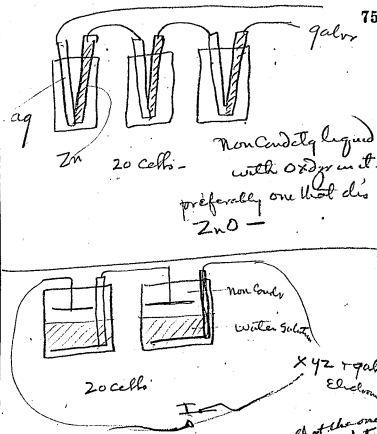
put enough battery or Emf on to cause Branley ag to Cohere

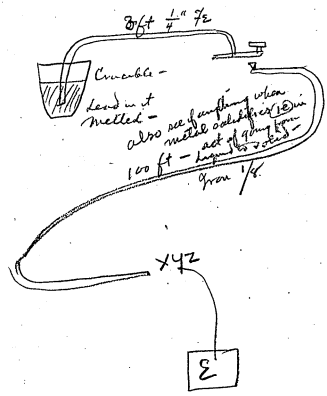
Make Current or rather Emf adjustable, on Talking Each vibln decohere + battery recohere

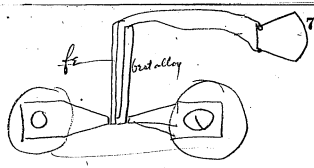
+ so on it should be very loud —


Great Thermo alloy
Fe
Current switched alternately


Cold
Hot
Deflection of amp dif when
Ct on or off

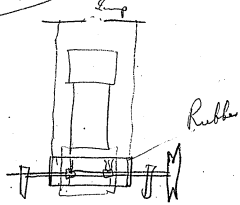

galv
aq
Zn
20 cells
Non Condtg liquid
with oxygen in it
preferably one that dis
ZnO
Non Condtg
water Solut
20 cells
X yz + galv
Electrode
Arrange the Electrodes so that the one
in Non Condtg is very near the Condtg
solution


3 ft 1/4" 7/2
Crucible -
Lead in it
Melted -
also see bumping when
metal oxidized in
100 ft - Length of 9 mm tube
9 mm 1/4
XYZ
E



Big Mag

see if any change when Ct is in big mag



for Organic Liquid Boiling

Chl Sulphur – also with 60 % of dissolved Sulphur –

Sulphur Mon iodide, heating S & I together Even under water, solid melts 60 Cent – probably dal in Organic Liquids –

Crystalized or Metallic like Selenium ought to act like Se with pail on champagne

Possibly in Organic Liquid

Coat, grids of MnO_2 & other

Can be used to advantage as we can make them Cheaply

Boron Nitride heated in a flame phosphoresces with bright green & violet light —

Silicon melts just above the boiling point of Zinc —
Can be cast in sticks —
think I saw in Chem Catalogue
Cheap Silicon — get some or make some for themselves —

Anhydrous Barytes dis in pot methyl al
" Calcium Chl "
" Lithium chl
magnesium chl "

Iodide Methyl good liquid organic Betty
Its infed in Laboratories —

Normal Methyl Sulphite, stable liquid
" " Sulphate "

Methyl Sulphuric acid — no odor, syrupy liquid
forms salts, sol methyl Al —

Nitro methane heavy liquid — weak acid —
Salts very explosive —

Lead Methyl liquid — inflamed in air — ok

Tin tetramethyl liquid stable —

Iodoform CHI, only 0.26% of H,
good to dissolve in liquids —

Note Iodoform dissolved in Bisulphide
Carbon is excessively sensitive to light,
Colored violet owing to liberation of I —

Chloroform only liquid
$CHI-Cl_2$ —

Formic acid — liquid —

following salts combine with anhydrous
Ethyl al it acts as water of crystallization
LiCl CaCl MgCl Mg Nitrate,

Sodium Ethylate (dis Na metal in al)

~~Bo~~

Ethers are the Oxides of Alcoholic
radicals —
Ether dis S, P I Br Chromic oxide
Ferric Chl HgCl. AuCl PtCl
Several other Chloride, Iodides &
Br from salts — acid salts of Ether, all liquids
Ethyl Cl. Iodide Bromide — Ethyl Sulfate (liquid)
volatile —

Oleic acid —
glycerine with dif chemicals
in it —

Scheme —
friction induces p or n in powdered
material, for instance Rosin —
Red Lead one becomes P the other
N — if mixed & blown together
two bulbs one P & other N chgd
the Rosin powder will come on
one & the PbO on the other,
there is a perfect separation
possibly. ore separation process
could be allowed this way
002

Try two balls or glass rods one P other N or Rub ~~Ebo~~ ~~say~~ or shake some Dendroland Conc see if Phosdine is made N or P or if can be accepted —

It is stated that rubbing a piece of ebonite gives Current that it causes the ~~molecul~~ rubbing ~~slopes~~ ~~that~~ it is not due to heat ~~but~~ but to a molecular vibration

~~Isolated Iso Isolate~~ In all liquid non Conductors, arsenic all non Conductors liquid —

Organic Liquid Chlorides

Chromium Oxychloride Liquid
sometimes called Chlorochromic
acid — Mobile liquid boils 118 C
Sol in acetic etc.

Vapor of Chromic Chl passed thro
red hot tube gives violet prisms
of $2\text{-}Cr_2O_3 + CrO_3$ — which
is magnetic = possibly thus
ok in KOH. No CrO_3 reduced to
lower oxide without combining with
KOH.

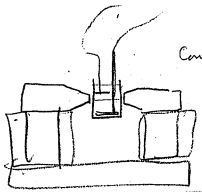
Molybdenum Dichloride Sol in
cold water Sol Alcohol & Ether
Insoluble Mo dis in Ether —

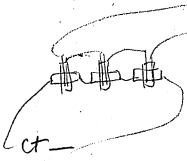
Hexachloride of Tungsten sol
in Bisulphide Carbon —

Tungsten Bronzes Conduct & well
have all of them made in a
proper manner, see the original
paper —

Uranic Nitrate is Sol in Ether

Uranyl salts highly sensitive to light





Stannous Chl dis Alcohol

Tin tetrachloride thin fuming liquid mixes in all proportions with Br_2 & Carb Bisulfide —

Tetra iodide Tin — Sol Bisulfide C absolute alc — Ether, Chloroform + Benzol —

Phosphide Tin Sn_3P
Course crystalline Mass like Cast Zinc Cinder — Thermo —

Vanadium Dioxide V_2O_2
Metal like Crystal Conducts E — Thermo —

Vanadium Trioxide V_2O_3 in powder pressed together Conducts E

Vanadium Tetrachloride fuming liquid –

Vanadium Oxychloride $VOCl_3$
lemon colored liquid (fuming)

Tribromide Sb Sol Bisulfide C
Triiodide Sb. "

I think Rafu should go ahead on reducing Va Cr Bi etc compounds by hydrogen stopping at def points
test same for bolting –

Photo.

gold trihydrosyl decomposes & gives off O when exposed to light

Photo!

Aurous Cyanide must be made & washed in the dark. Sensitive to Light

Chlor-auric acid. Sensitive to Light —

Thermo - Best single alloy - make a lot of it - then make 5% changes with all metals, then, make 5% changes with all the other single alloys which show up fair -

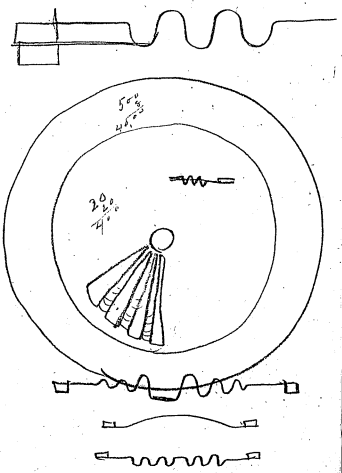
possibly a mixture of finely divided Hydrated Ni_2O_3 with Gelatin, or Albumen, or albumen or Honey on plate would be sensitive to light, might be done cold,

also Iodide of Nitrogen with Gelatin, albumen or Bitumen as emulsion may when dry be decomposed by light, or Magnetism (electricity) or X ray or X42 + thus obtain photo possibly the Ultra red might affect it + thus photo by dark Radiant heat —

Obtain from Foote or English a lot of Rock salt to cut plates from — also Rock Crystal to cut lenses + plates from —

Here is a chance, ~~that~~ by Eye & photo plate, all the slides with Monochromatic Light from the different metals in arc light. Especially Violet (12) metals giving most intense lines in Blue green Violet & ultra,

It is possible with say Magnesium that with very strong light of one refrangibility well found. Specified crystals that will



Br_2 in unison + fluorescence strongly which might not fluoresce at all with absence or weak line due to metal,

See if X ray explodes Dry Iodide Nitrogen —

find a solution which dissolves $N_2O_3 - H_2O$ — possibly a saturated sol of some neutral or acid salt, will do it, try organic liquids — Does Uly decompose it. if not this would answer —

Aluminum	0.40
Copper	1 00
Silver	1.02
Gold —	2.87
Zinc	2.72
platinum -	17.00
Iron	5.20
~~Gr~~ Nickel	6.00
Tin -	6.76
Lead -	15.60
Antimony	15.75
Bismuth	24 40
Mercury	90 00

Reo metals 1 meter by weighing 1 gram

Relative Rho

1440) 4000 (2.77
~~2880~~
1120
1440
1000
~~1440~~
~~2800~~
~~2880~~
~~2~~

57) 1420 (215
114
~~2~~
~~2~~

1440) 13 071 (9.25
12960
1110

1440) 3983 (2.72
2880
1100
1080
~~2~~

1440) 8666 (6
~~5760~~

Watts 1st Sep 56f

1440) 28570 (1580
1440
8200
7200
~~9700~~

1440) 35257 (2440
2880
6420
5760
~~6~~
~~6~~

1440) 9864 (6.76
8640
1440
1440

1440) 2 4640 (17.11
1 440
10 240
10 080
1600

1440) 7522 (5.20
7200
~~3~~ 2 2

Make some or buy some Dry plate Emulsion in black bottles, for use in Experiments -

See Will Ry fluorescence, perhaps a magnetic or Electric Current only applied will Cause fluorescence to phos Continue by heat — Thus gas or fluorescent lamp

Formate of silver decomposes when moist Even in the dark

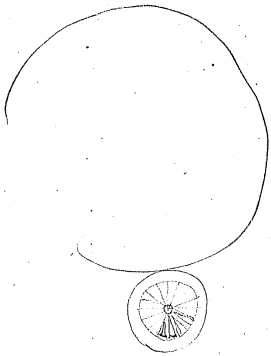
perhaps X42 [illegible] — dark does it

~~Try in dark bottles, or box~~

Formate of Hg does same thing — but Light also in dark

the dark phenomena may be due to Radiant Heat S S S

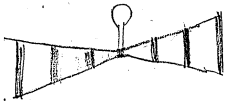
~~Amphibole decomp by pressure?~~

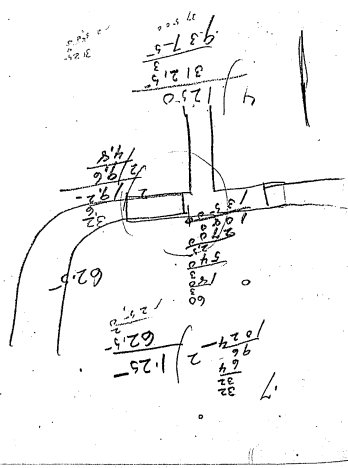


Tourmaline Crystal 116 of book up to 113.
becomes electrical
by heat one end P other N —
its electrification must have very
high Voltage, possibly a
Mixture of fine Tourmaline Crystals
+ a substance which will
fluoresce by E when mixed +
heated would give light —

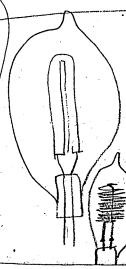
---

pyroelec is exhibited only by
Hemihedral Crystalline form





long chimney filled with phosphorescent crystals or sides phosphorescent by heat below red



glow lamp

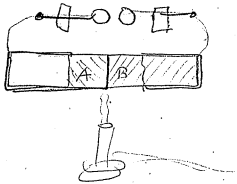
thin sheet metal, coated with cryst. phosphorescent below red heat or bowl of iron or other were coated with powdered phosp material —

Test magnetism of different metals at a red or white heat with pointed poles of Eq mag using wires or a bunsen burner - probably that platinum may be magnetic -

---

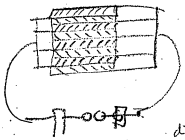
Test Best Thermo alloy Cooling slowly e.g. annealed gomm in mould - see which gives best results.

Clean out Galv Rooms + hire a man to keep it + Chem bldg clean + everything in order put tables, covers over tops of stone pieces, + partition a dark room



I have an idea that pressed blocks of precipitates ~~are~~ like Oxalate of Lime which becomes Electrical by heat, or powdered Crystals, in block put together & coated with metal & heated at puncture or all over one giving P Selec & other N shaped gives platinum-magnesium effects. Especially if a number of them put together

If heating all over will do then disks can be used



Rosin – P

Red Lead – N.

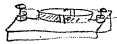
when absorbed rubber

with Sealing wax + Sulphur

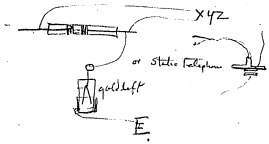
Dry oxalate of Lime when stirred with a glass or platinum rod becomes so electrical it can be lifted out of the cup

Lump of oxalate Ca between plates XYZ comes exactly it & attracts thread —

powdered Tourmaline, Oxalate Ca
ag paste in Vac –



in when X42 or I comes closer – Throughout
by a good Branley with plain ag or other
powder –



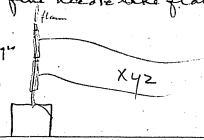
Mixture of Oxalate of Lime with a Resin –
A Condenser with Oxalate lime alone
between,
A mixt of Oxalate Ca & ag powder for jarring

find a fused salt that will dissolve Oxalate Ca

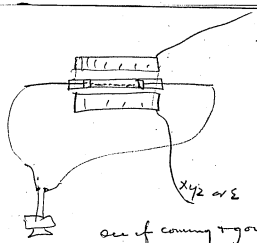
Make Complete act of the Oxalates & double oxalates, & use oxalate Ca as impurity in other fluorescens etc.

Make a very fine high note whistle & arrange that air vibrations pass a narrow passage between two unstrained disks — use material of Brandly. The E or XYZ waves serving to change the quality of the note. This should be very sensitive — use listening tubes.

Make a Cirpellitry of Cross tube through which acetylene gas passes & blow a very fine needle like flame



Insulated outside
Electrified on charge
jet,



on of coming & going of the
Lines of force cuts ag particles makes
a local Current & the whole
~~attract~~ instead of action of
Current direct —

Organic (liquid) Storage Bat.

glycerine $C_3H_5-(OH)_3$ alcohol of a triad radical — al

use CP glycerine (also or) in a non conducting liquid —

glycol ok =

Ferrochloride seems to be a general Organic reagent its soluble — many liquids (organic) + acts as oxygen probably ok for storage.

Ethylene Oxide — "forms the link between Organic + Inorganic Chemist" ~~Unlike~~ its neutral yet a powerful base unites with HCl ~~also~~ as strongly as ammonia, its ethereal liquid boiling 14 Cent, $\begin{matrix}CH_2\\CH_2\end{matrix}\Big\rangle O$

~~Et~~ Diethylene Dioxide —

$\begin{matrix}CH_2\\CH_2\end{matrix}\Big\rangle O.O \Big\langle \begin{matrix}CH_2\\CH_2\end{matrix}$ = Ther boils 102

Crystalize a rapid good Crystalizing substance (with needles) in a very strong moving magnetic field - Have it hot - let it cool off + Crystalize - notice if any different arrangement of C from a duplicate solution not in field but made at same time under same Conditions,

also try 3 or 4 drops on hot glass microscope slide in field + out, Then can examine more closely - might try a number of Cryst + solutions on slides as this is an easy method — also in Compound field — a great many slides could easily be made in Constant field by using pointed poles of big magnet —

Could put 5 or 6 drops on slide with a crystal or so of the substance heat the ~~[illegible]~~ glass to dissolve it + finally to evap. $CHCl_3$ O + recrystalize it all in the field —

Organic Storage = <

fused chloride etc are decomposed by current

no water =

Therefore say Chl Hg dissolved in an organic liquid, with Hg at bottom Cell

a gold or Carbon with graphite mixed with a trickle, which goes to a pentachl.

when chg — This is not an example —

The dissolved active material acts as if fused. The Organic liquid is simple another way of fusing

(14) dissolving it so molecules are free to move — strong solutions should be good Conductors even

when Organic is insulator, it is not necessary Organic should

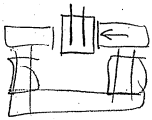
dissociate, because there is no dissociation in fused

Electrolytes — The main thing is the Electrodes to bring abt

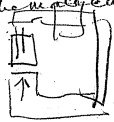
Conductivity —

Iodide of ethyl decomp by light.

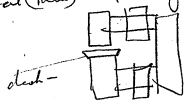
Organic liquid Galvany.



possibly Carbons which do not Conduct might Conduct in a powerful mag field by orientating the molecules —

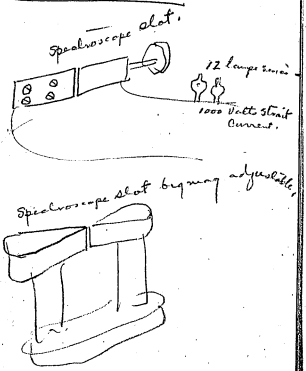


It is possible that Light & X ray fluorescers crystalizing in a powerful Mag field might fluoresce different or loser. It altogether + salts which do not fluoresce might do so. ~~Perhaps~~ Iron dish with paraffine Coat (thin) might be good



Crystalize some Light & X ray fluorescers from every solution. They will dissolve in. —

Crystallize light & X ray flow in a strong static field!



If makes any diff by diff metals to make slot

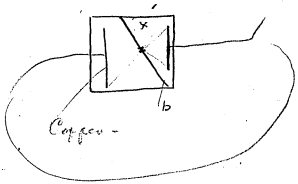
try X + Light fluorescence in a powerful Mag field also 1000 Volt Condenser field — also Hot environment also Cold —

Make by fusion process Uranates of all bases for fluorescence — rares + all — also melted Uranates by Walter Crystlizer

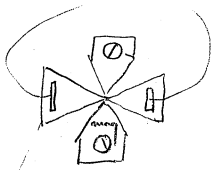
Charge + discharge new Mij Charge battery single grid in Mag field see if any diff —

Make liquid cell & with small spectroscope see if powerful magnet causes changes in the absorption of dif parts of spectrum for dif liquids — Try static field, also try liquids ~~& which~~ with same electrodes & solutions of their own salts where powerful electrolytic action is going on — Try a large number — also alternated fields —

fine slot.

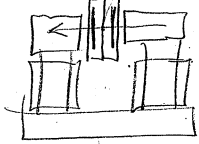


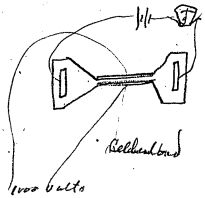
This is electrolytic cell with polished silver in X. The partition b is an insulator with a very fine slot or less, use Copper sulphate so pass current for just little time how deposit is



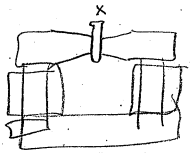
Cell with Electrodes same +
salts of the Electrodes,
alt Connecting both Cells —
.002 with powerful poles of
Mag —

also

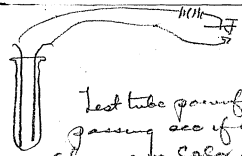




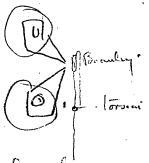
see if solution changes anything



X test tube powerful field
Try Chemical Color reactions see if any change in field



Test tube powerful current
passing see if any
change in color reactions
when current passing



see if robs in powerful field

also put a Branly in
a field (Mag) + see if it
only bitter or worse

It is possible some of the Crystals which Carbon without mixing of Carbon slowly & then put in Lime in a furnace & heat to a ~~the~~ terrible lamp by reduction might go to Carbonado – also Anthracite & Carbon from Sugar & other sources – might do the same =

If I remember right when I first melted things with arc got I had with Widemannstand figures – Hence possibly metals exposed to very high temp might change

It may be that a disk of Rubber revolved very rapidly between the poles of a powerful Mag or having a tube of that liquid which deposit Crystals and Cooling would when revolved until Cold the Crystals might be different in any event the Crystals as they form would be thrown out to end of tube by Centrifugal + Conic phenom developed

In non grid try experiment of reduced iron mixed with ferric hyposulphate —

Try with isomorphous crystals in all the solutions that crystallize in same system — make mixtures also When a crystal has formed in one solution pick it out & put in another & so on until it has been in each solution this should make a compound crystal & do some in the way of phenomenon or X & light fluorescence —

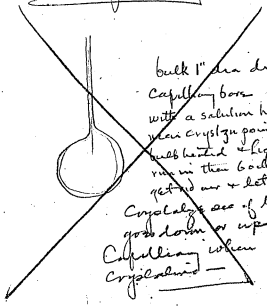
Run a Curve on best thermo alloy & see how E.M.F. goes with the temp —

make a series of Cu sulphides varying by 5% —

Perhaps metals deposited Electrolytically might act diff as Thermo couples also alloys could be deposited. Try see if can deposit best alloy — etc.

Possibly depositing Fe H, & Co in powerful mag field might give diff thermo than if worked in regular way never having been heated

The Lead & tin tree also Ag &
Cd & Zn crystals formed by
Electrolysis - Washed & ~~of~~
Compressed might work
def for thermo also mixture
mechanically of crystals
as in alloy might do?



Co_2O_3 acetate is stable, try mixture of Co_2O_3 acetate & acetate Zinc or Nickel Electrodes, also acetate Cadmium, storage

---

I think Ni_2O_3 is deposited from some of its salts on Electrodes tried which & there was some reaction with Cadmium & use Ni Electrode for storage battery =

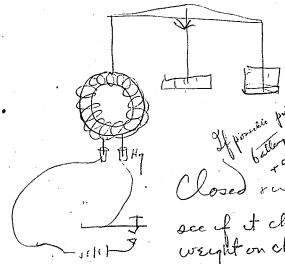
Ferric acetate kept in ebullition of 12 hours, undergoes a remarkable change acquiring a brick red color remaining clear when viewed by transmitted light but opaque & opalescent by reflected light = make small tube full & act on it by fields mag & see if it will change in fields change

(Olivine precip or rather mix NH_3 with Conc Sul Ac. 2 mg to Bromine, heat to 250. C sulph acid all goes off in form of red sulphite – leaving arsenic ox? –

It is possible that a boiling saturated solution of an X-ray or light fluoresces – suddenly poured into large quantity of say a liquid in which its insoluble which liquid is chilled to below zero or over chilled Copper plate would have crystals in a very unstable state + fluoresce better –

Nitrous arsenious acid in hot Hell, left to cool in dark gives a flash of light on the formation of each Crystal —

Especially try all the Iron Salts & Double Salts Crystallizing in powerful Magnetic field & Current stress,



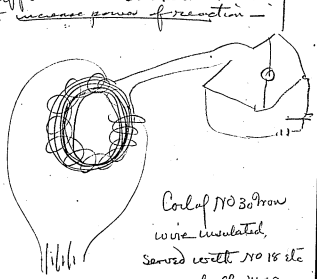
If possible put battery in the pan + drive off by charged balls + charge balls neg.

Closed ring

see if it changes weight on charging + discharging — good

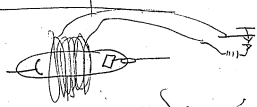
Ether has something to do with gravity —

Large Crystal (turned
bored & wound with
wire - Try several
or many Kinds & get Kick on
galvanometer to see if there are
differences, I make it closed now
to increase power of reaction -

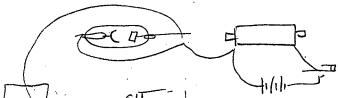


Coil of No 30 Iron
wire insulated,
Served with No 18 etc
to powerfully mag
See what change if this
place on magnet gives
in Rec & my phenomena -

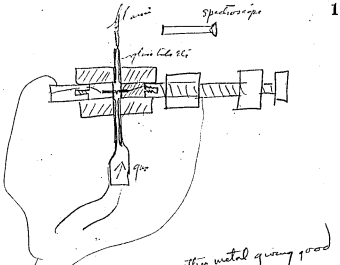
Make X ray bulb - one inch dia
& six ft long - see phenomenon -



X ray Reg surrounded by coil
powerful Ct notice phenomena -



Etheric from
plain Coil see how it explodes
X ray



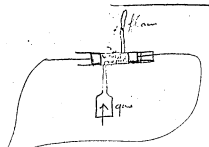
E4 X42 magnesium or other metal giving good

Spectroscopic line X42 or Ct passing across gauze
1/2 from apart — gas gives fine vapor or particles of
metal which carried forward by gas & give
spectroscopic line — thus at to be accurate

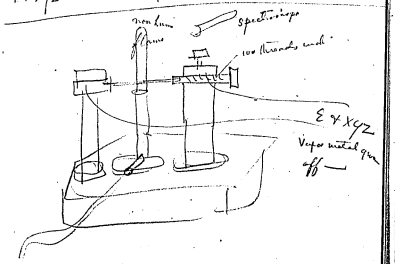
---

possibly two fine points of a Conductive
Sulphide of a metal giving a very strong
Spectral line might do very accurate
HgS — Na Amalgam Lithium Amalgam —
possibly an Arabinate would do —
it should be marvellous sensitive
with a Lithium Conductive Compound

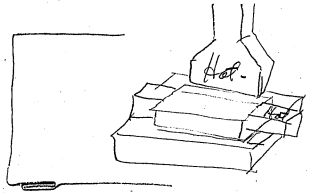
perhaps an alloy of K or Li with a metal can be got — perhaps Te or Ar will do alone,



E 4 X 42



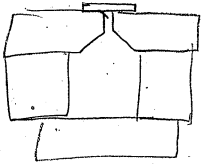
Battery jar —



Three strips of .005 solder then have long heated Copper or iron + bring down full length under hydraulic or screw press - Same with the bottom only high pressure — Na amalgam — afterwards plate,

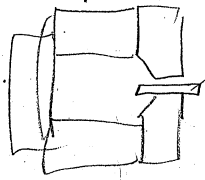
See if flowering crystals still fluorescent — or change — or non fluorescent, also phosphorescence change

plate glass, crystalizing solutions on glass but + cold etc.



use iron plate + crystallize on hot also copper plate. In light + darkness —

Colored + otherwise crystalized under strong stress



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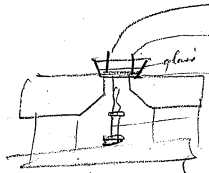


Crystalize in field under Electrolytic action staining — Light & Dark
Try fluorescence effloresce.
also under heat while
Crystalizing also dust Metals,
also plating solutions
porcelain dishes flat also
Metal dish Impartially
also Nickel —

Potassio-Manganic Oxalate
Very easily decomposed by
light + Heat -

Ammonio-Mercuric Oxalate
Easily decomp by Heat + Light

Potassium Mercuric Oxalate
~~Easily~~ decomp by Heat + Light

Most Nitrides Conduct Electricity
make all that do so Conduct
+ try for Thermo, Elec

Gently decomposed Nitrate
Calcium + phosphorus out
(Baldwins Phosphor)

Mercuric Methide has the highest spec gravity of any known non metallic liquid 3.069 — flint glass floats on it, its a powerful alkaline base

Diazonitrophenol
Light yellow powder turns red on Exposure to Light.

also Diazo nitrotetrophenol

Platino chloride of Diazobenzil
Crystals when dropping
Exposed to Light turn Brown

Hydrobromate of Azophenylamine
Explodes violently by
heat friction or pressure

Nitrate of Azophenylamine
Explodes with terrific violence
Exceeding fulminate of
Hg or Iodide Nitrogen,
Explodes Heat 100 Cent
friction or pressure causes Explosion

Azobromophenylamine is a
very dangerous Compound
Unbelighted pressure or even
Contact both very violent explosions,
Causing it to fall off with very
explosion spreading of not
exceeding Azophenylamine

Hydrochlorate of Chloranuline

The Chlorophalenate of a Chloranuline gives crysts that turn violet when exposed to light —

Ethylanilene decomp by Light

Ethylidene-dephenyl-diamine Crysts gradually turn red when exposed to light.

— Sesquioxide Copper (by) as a light salt precipitated mixing Chloride Lime, with Nit Cop beautiful Rose colored sub stable Cu_2O_3 deloude.

Oxalum Salt

Nitroaminic acid crystals get darker when exposed to light —

Ferrocyanide of potash solid in liquid slowly decomp by light giving precipitate Blue —

Ferriday K solution decomp by light rapidly

Nitroferricyanide of Potassium changed by light —

Nitroferricyanide Sodium Solution more sensitive deposits Prussian Blue on exposure to Light,

Dry HgCy w/ Chlorine yields decomposes by light

Evidently there are numerous
Dry prints that cannot
be coated on a glass
plate in a glass cell
containing Chlorine gas
by which photos could
be made by action
of Light —

Cyclamin turns
Brown when exposed
to Light. a solution
in sealed tube exposed
Light forms a white solid

Digitalic acid affected by light

Many organic sub prone to oxidize at slightly raised heat in the dark ~~[illegible]~~ ~~[illegible]~~ not oxidize at ord temp in dark and rapidly oxidize at same temp when exposed to light ~~especially~~ com with indigo Prus Blue Turmeric colors flowers etc Bleached =

Ericinone Crystals affected by light changes Color.

Iodide of Ethyl Colorless — If flowed on Hg & Exposed to Light its decomposed — Red Iodide Hg formed Liberating Ethyl —

Iodide Ethyl is ably a fine Solvent for Sulphur as its decomposed by the Metals in presence of light

Ethyl & chlorine no action in dark — in strong sunlight Carbon free & deposits Charcoal.

Monochlorinated Chloride of Ethyl — Chlorine dissolves in it abundantly — & there is no action in the dark but when exposed to light a violent action starts & Carbon of HCl come off = Evidently Light seem with chlorine has some connection with the Chlorine it not merely the Colour

Chloride of gold in Ether, deposits gold when exposed to light

Ethylene Dichloride of Platinum (solid) – becomes brown or black when exposed to light

Formates of Hg & Ag get blacken when exposed to light, + to some extent even in the dark they are even decomposed by pressure – also heat, formate of silver even turns blacken the dark especially upon moist –

Fulminating Silver blacken when exposed to light —

Fulminates gives light effect in Crystals & will probably be fluorescent like pt cy salts,

Furfural, turns Brown in light & some room in dark —

Gallotannic acid acquires a yellow color on exposure to light,

Trichloride of gold decomposes quickly to gold when exposed to light

Auric oxide reduced by light

Guaiacum, changed by
Exposure to light especially
Violet Light

Acid chromate of Quinine
Rapidly decomposed when
Exposed Light

not but

Perchlorate Quinine, decomposes
phosphorescence

Valerate Quinine when prepared
from Natural Valeric acid
Crystals phosphorescence when
Rubbed

Racemate of Hg colors on Expo to Light.

Hydrocyan-Rosaniline colorless, turns Rose red when expo light

Rosolic acid Rosolates Easily decomp by Expo to Light losing their Color.

Ruthenic Tetroxide, Sol Water, not effected in dark but Rapidly decomp when Expd light.

Santonin turns yellow on
Expos to Light.

Dichlorosantonin ditto

Japan Red p. Brazilwood
Sensitive to light & air -

Ammonio-Mercuric Sulphate
decomp to Hg globules by light
& at 100° decomp in dark
in sealed tube

Metanaphthosulphonic acid
lead salt turns brown by light

Chloride Thallium decomp by Light!

Thymol a product formed of Thymol — decomp by light

Thymol in presence of Bromine is altered to solid pentabromo Thymol!

Thymol in presence Chlorine shew more sensitive to Light!

A Certain Salt of Tin Blackens by light

Acetate of Ethyl in dry Chlorine, Explodes in Sunshine

Chlorine acts on aqueous Sol Citric acid in Light to make Hexachloroacetone

Iodide of Acetyl decomp by Hg in Light

Iodide of Mercurallyl turns yellow in Light

Sulphurous — Iodotrimethide p. 885. Lat. Vol with white Crystal quickly turn Brown Expo to Light

Tungstic acid turns blue on Exposure to Light, poly from joint effect Organic matter in air & Light

When mixed with Organic Subs Easily Soluble is reduced to Blue Ox by Light.

Chlorine water on Benzoic acid in sunshine forming tough gummy masses

Mercurous Benzoate turns light yellow in light

Cacothelene product decomp Benzene by Nitric exposed light turns dark Brown Vol. 1 700

Sulphide of allyl precips Hg precip turns black in light See Watts Vol 1 144

Arsenate Cu + NH4 decomp by Light — Vol 1 381 Watts

Heat Phots } Di mercurous arsenate, precip changes color by heat

~~Heat Phots~~ } Sulphantimonite of Sulphoethyl powder changes color by heat

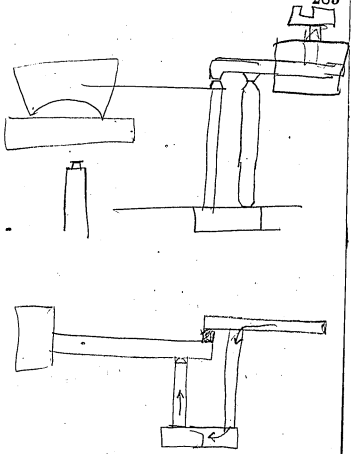
Monochloroacetic acid
action Chlorine on Acetic
Even in cloudy weather &
slightly in dark.

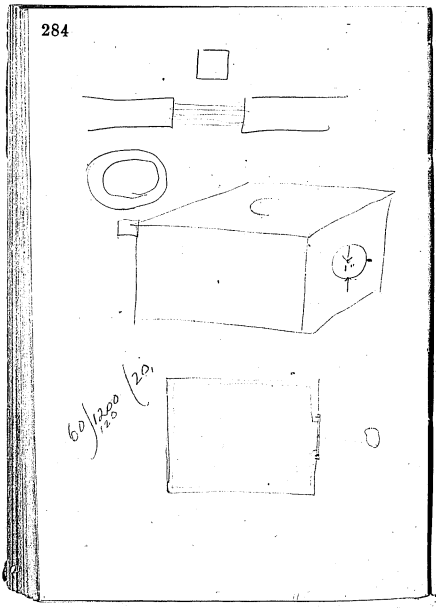
5 of acid Chromate Pot
mixed with Water or Alcohol
deposit Brown sediment in
light but not in dark

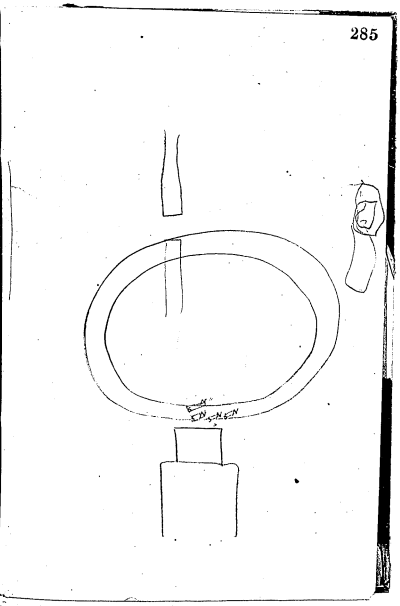
Phosgene gas, action Chlorine
on Carbonic oxide in light,
forms Chlorocarbonic acid

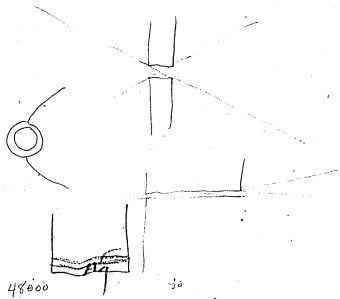
If plate in Camera with a
Coloured Compound, the
acid would be formed by the
light of the exposure & the
acid would discharge
the Copper & muddle plates

Read for Light Vol 1 445




1"
60 | 1200
120
20


CONCRETE



48000

4·80 ft

480

·005

60) 1400 (23 ft

120

200

4" Long

256) 1400 (5 ft

1280

4000) 14000 (3

186 000

53000

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93000

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32

12

64

384

3964

7484

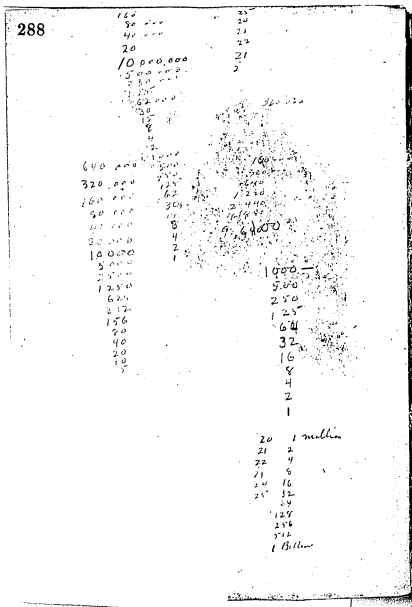
2957

37485

400,000,000,000

1000) 900000

4000


640 000
320 000
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5000
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1250
625
312
156
78
40
20
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125
64
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25 32
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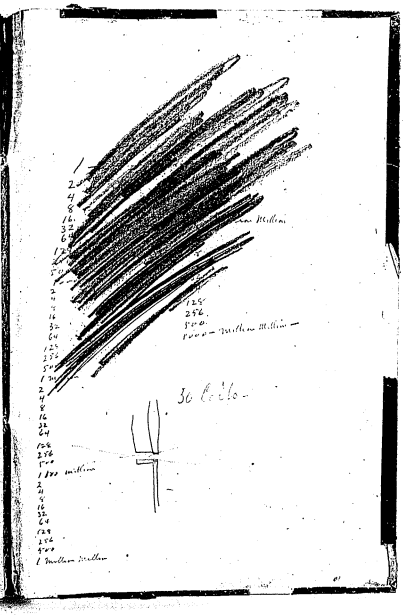
128
256
512
1 Billion


Million
125
256
500
1000 Million Million
30 Billion
1 million million